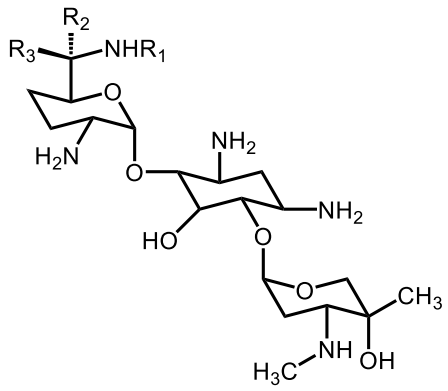
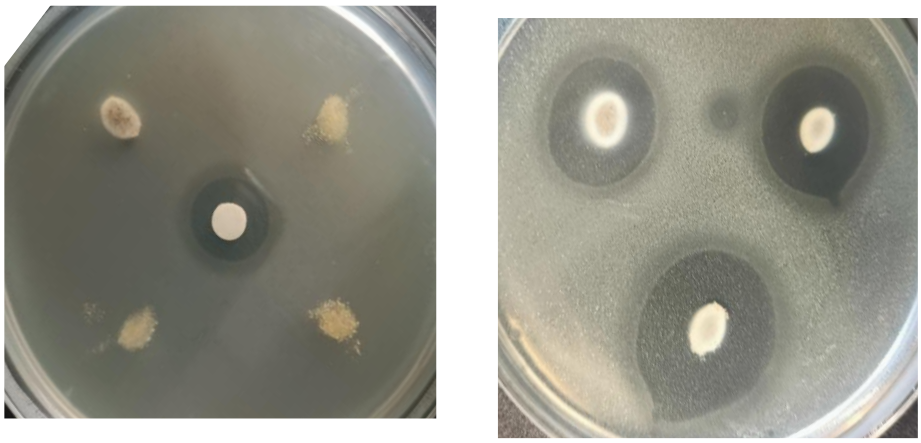
**Supplementary Material**




| Component | $R_1$ | $R_2$ | $R_3$ |
|---|---|---|---|
| **C1** | $CH_3$ | H | $CH_3$ |
| **C1a** | H | H | H |
| **C2** | H | H | $CH_3$ |
| **C2a** | H | $CH_3$ | H |
| **C2b** | $CH_3$ | H | H |

**Figure S1.** Structure of gentamicin's different components.



**a)** **b)**

**Figure S2**. Antibacterial test with an adaptation of the agar diffusion method. (**a**) MBGs undoped (I) and doped with 5.3 mol% of cerium (II); a control disk containing Gen was placed at the centre of the plate. No inhibition halos were observed in absence of Gen. (**b**) MBGs loaded with Gen (0.4, 0.8,1.2 mg/mL).

**Table S1.** Weight C/N ratio for Ce-MBGs at different Gen concentrations.

| | C/N |
|---|---|
| **MBG0_0.4** | 3.7 |
| **MBG1.2_0.4** | 3.0 |
| **MBG3.6_0.4** | 3.7 |
| **MBG5.3_0.4** | 3.0 |
| **MBG0_0.8** | 3.5 |
| **MBG1.2_0.8** | 3.5 |
| **MBG3.6_0.8** | 3.5 |
| **MBG5.3_0.8** | 3.6 |
| **MBG0_1.2** | 3.6 |
| **MBG1.2_1.2** | 3.7 |
| **MBG3.6_1.2** | 3.6 |
| **MBG5.3_1.2** | 3.6 |
| **MBG0_1.6** | 3.5 |
| **MBG1.2_1.6** | 3.6 |
| **MBG3.6_1.6** | 3.6 |
| **MBG5.3_1.6** | 3.7 |
| **MBG0_2.0** | 3.6 |
| **MBG1.2_2.0** | 3.3 |
| **MBG3.6_2.0** | 3.2 |
| **MBG5.3_2.0** | 3.5 |

**Table S2.** Gen(%) and LE(%) for Ce-MBGs at different concentrations of Gen loading solution.

| Gen[mg/mL] | MBGs | Gen(%) | LE(%) |
|---|---|---|---|
| **0.4** | **MBG0_0.4** | 2.6 | 66 |
| | **MBG1.2_0.4** | 2.9 | 73 |
| | **MBG3.6_0.4** | 2.9 | 74 |
| | **MBG5.3_0.4** | 2.8 | 71 |
| **0.8** | **MBG0_0.8** | 4.9 | 59 |
| | **MBG1.2_0.8** | 5.2 | 64 |
| | **MBG3.6_0.8** | 5.4 | 66 |
| | **MBG5.3_0.8** | 4.8 | 59 |
| **1.2** | **MBG0_1.2** | 6.9 | 58 |
| | **MBG1.2_1.2** | 7.9 | 67 |
| | **MBG3.6_1.2** | 7.2 | 61 |
| | **MBG5.3_1.2** | 7.1 | 60 |
| **1.6** | **MBG0_1.6** | 6.9 | 43 |
| | **MBG1.2_1.6** | 5.9 | 36 |
| | **MBG3.6_1.6** | 4.8 | 30 |
| | **MBG5.3_1.6** | 6.8 | 43 |
| **2.0** | **MBG0_2.0** | 5.7 | 28 |
| | **MBG1.2_2.0** | 6.2 | 31 |
| | **MBG3.6_2.0** | 5.0 | 25 |
| | **MBG5.3_2.0** | 6.6 | 33 |